

Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.

SNOW SURVEYS AND IRRIGATION WATER FORECASTS
FOR MISSOURI AND ARKANSAS RIVERS

May 1, 1939

The following data pertaining to snow surveys and irrigation water-supply forecasts are provided by Bureau of Agricultural Engineering of the U. S. Department of Agriculture, in cooperation with State departments, other Federal bureaus and local organizations. The snow measurements are made principally by field personnel of the following organizations: Forest Service, National Park Service, Bureau of Reclamation, U. S. Geological Survey, War Department and State Experiment Stations. This work is otherwise conducted cooperatively with the State Engineers of Wyoming and Colorado, and various municipalities, irrigation associations, power companies and others. Precipitation records are supplied by the U. S. Weather Bureau.

PRECIPITATION DATA

WATERSHED	STATE	Precipitation		Departure		Precipitation		Departure	
		October 1 to		from		April		from	
		April 30		Normal		Inches		Normal	
Missouri	East. Mont.	4.02		Inches		0.76		Inches	
Missouri	Cent. Mont.	5.48		-0.81		0.74		-0.29	
Missouri	North. Wyo.	9.49		-0.32		1.38		-0.43	
North Platte	Wyoming	6.03		+0.51		0.94		-0.55	
South Platte	Colorado	6.41		-1.23		1.09		-0.58	
Arkansas	Colorado	5.91		-1.58		0.95		-1.63	
				+0.09				-0.58	

Colorado

In Colorado the May first snow surveys indicate a smaller water content of snow on the courses than for this same time last year. Warm weather in many localities caused melting with pronounced increase in stream flow. Precipitation for April throughout Colorado, for both mountain and plain areas, was about one-half the normal. Only a very few snow courses, elevation 10,000 feet or more, indicated an equal or greater water content than the April 1 surveys.

For the South Platte drainage, average for 15 snow courses, the water content of the snow is 8 percent less than May 1, 1938. For the headwaters of the Thompson, St. Vrain, Boulder and Clear Creek, the water content is equal to or slightly better than for last year. For the Poudre drainage, 6 snow courses, the average water content was about 20 percent less than last year.

For the Arkansas drainage, the average water content, as measured on 9 snow courses, was 5.9 inches, which is about 25 percent less than it was a year ago. As compared with the four-year average, it is about 3 percent more.

These are the rates for the various types of property. The rates are based on the assessed value of the property. The rates are subject to change by the Board of Supervisors. The rates are subject to change by the Board of Supervisors. The rates are subject to change by the Board of Supervisors.

TABLE 1

Property	Rate	Property	Rate	Property	Rate
Residential	1.00	Commercial	2.00	Industrial	3.00
Residential	1.00	Commercial	2.00	Industrial	3.00
Residential	1.00	Commercial	2.00	Industrial	3.00
Residential	1.00	Commercial	2.00	Industrial	3.00
Residential	1.00	Commercial	2.00	Industrial	3.00
Residential	1.00	Commercial	2.00	Industrial	3.00
Residential	1.00	Commercial	2.00	Industrial	3.00
Residential	1.00	Commercial	2.00	Industrial	3.00
Residential	1.00	Commercial	2.00	Industrial	3.00
Residential	1.00	Commercial	2.00	Industrial	3.00

TABLE 2

These are the rates for the various types of property. The rates are based on the assessed value of the property. The rates are subject to change by the Board of Supervisors. The rates are subject to change by the Board of Supervisors. The rates are subject to change by the Board of Supervisors.

Reservoir storage in the South Platte drainage has continued to improve over the past month. The principal reservoirs in this area will in all probability be filled to capacity during the early June run-off. The present storage of water for this season's use is definitely greater than for any period during the past 10 years. For the Arkansas Valley in Colorado the storage is materially better.

Sub-soil moisture conditions throughout the irrigated areas are reported to be good. Because of deficient rainfall and prevailing winds during the month of April, the top soil has lost much of its moisture. However, crop conditions at this time are generally good.

Because of the deficiency in precipitation during April, the run-off from the snow storage in the mountain areas will be less than it was last season. Spring and early summer run-off will be ample to fill completely all reservoirs, and in addition will furnish an adequate supply for direct irrigation until July first. There will be some out flow from the state for the South Platte but little or none for the Arkansas. The late irrigation supply from the snow at high elevation will be below normal.

Wyoming

May 1 snow surveys in Wyoming indicate definitely less water in the snow cover than at this time last year. Only a very few of these recent surveys show an increase in water content over that of April 1, and in some cases the course area was reported bare of snow.

For the watershed of the North Platte in Wyoming, ten snow courses show on the average for May 1, a water content of 17.4 inches as against 20.6 inches a year ago, or a less amount of about 15 percent. This figure is 13 percent less than the four-year average for these same snow courses. For the Laramie River drainage, seven courses show an average water content of 9.9 inches, while a year ago it was 13.3 inches. By this comparison, there is about 25 percent less water in snow storage on this drainage area than for May 1 of last year, and about 16 percent less than the four-year average.

The Bighorn drainage area shows a marked decrease in the water content of snow, May 1, as compared with that of last year. Eight courses on the average show only 3 inches while last year the average was 5.8 inches, or a reduction of nearly 50 percent. This May 1 average is only 44 percent of the four-year mean. The conditions for the Shoshone and Powder River drainage areas are similarly deficient in water content of the snow cover.

Precipitation over the North Platte River drainage for April was below normal. The soil moisture conditions generally over the state are not good, and because of the unusually high temperatures in April, the top soil has dried out retarding the growth of range grass and small grain in the dry-farming areas. In the irrigated areas, water is being applied to the crops. In the Powell district soil moisture conditions are reported to be good.

Reservoir storage in the North Platte Valley is about one-third more on May 1 than it was a year ago, and for the Wheatland Reservoir, on the Laramie River drainage, it is double that of last year.

The run-off in the North Platte from snow storage will be approximately three-quarters that of last year, and from the Laramie River the run-off is not expected to exceed two-thirds. For the irrigated areas, where stored water will be used, it appears at this time that there will be an ample supply of irrigation water this season for the districts in both Wyoming and Nebraska.

Montana

Over the Missouri drainage area in Montana, the May 1 snow surveys show definitely a smaller water content than a year ago. The average of six courses on the Gallatin is but 40 percent of last year and 35 percent of the four-year average; five courses on the Jefferson show only 2 percent less than a year ago and 25 percent less than the four-year average; while for the Missouri seven courses have an average of 30 percent less, which is also 30 percent less than the four-year mean. From these comparisons, it is expected that the run-off from the snow storage will not be more than about two-thirds of that of last year.

The April precipitation over the Missouri drainage in Montana was about 70 percent of normal, and from October 1, 1938, to May 1 of this year, the accumulated rainfall has been deficient.

MISSOURI AND ARKANSAS RIVERS

Summary of Federal and State Cooperative Snow Surveys
 Bureau of Agricultural Engineering, U. S. Dept. Agr.; Forest Service; Colo. Agri. Expt. Station
 Issued May 10, 1939. Colo. Expt. Station, Fort Collins, Colo.

Main Drainage and No. Snow Course	Local Drainage	State	Location Locality	Descrip- tion	Elev. National		May 1 Snow Course Measurements									
					Forest		Av. Snow Depth		1938		1939		Av. Water Content		1938	
					In.	In.	In.	In.	In.	In.	In.	In.	Av.	In.	In.	In.
JEFFERSON RIVER																
6	Camp Creek*	Idaho	6mi. N. Spencer	21-13N-36E	6800	Targhee	--	--	--	--	--	--	--	--	0.5	--
7	East Fork R.S.*	Mont.	13mi. NE. Sula	16-2N-17W	5400	Bitterroot	--	--	--	--	--	--	--	--	0.0	--
	Elkhorn Hot Spgs	"	8mi. N. Polaris	15-4S-12W	8450	Beaverhead	15.4	18.2	10.8	5.1	17.5	18.8	13.5	3.6	4.3	3.6
9	Gibbons Pass	"	Gibbons Pass	4-28-19W	7100	Bitterroot	43.2	48.8	29.5	17.5	17.5	18.8	13.5	3.6	4.3	3.6
7	Moose Creek*	Idaho	3mi. S. Gibbons P	27-2N-21E	6200	Salmon	26.7	25.2	15.0	9.6	9.6	9.9	5.9	1.5	9.9	5.9
26	Pipestone Pass	Mont.	Pipestone Pass	11-1N-7W	7200	Deer Lodge	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31	Storm Lake*	Mont.	15mi. W. Anaconda	19-4N-13W	8135	Deer Lodge	27.4	29.1	26.1	8.6	8.6	10.5	3.0	3.0	10.5	3.0
				Average for Drainage			22.5	17.5	15.3	8.2	8.2	6.3	6.2	6.2	6.3	6.2
MADISON RIVER																
2	Aster Creek*	Wyo.	Lewis L.	44-3N110-6W	7700	Yel. Mat. P.	71.2	--	49.7	30.7	30.7	--	22.2	22.2	--	22.2
	Hebgen Dam	Mont.	Hebgen Dam	22-11S-3E	6550	Gallatin	8.9	16.9	0.3	3.6	3.6	7.0	0.1	0.1	7.0	0.1
8	Lewis L. Divide*	Wyo.	3mi. S. Lewis L.	41-2N110-7W	7900	Yel. Mat. R.	99.9	--	80.8	44.8	44.8	--	36.5	36.5	--	36.5
	Twenty-One Mile*	Mont.	8mi. S. Gallatin	1-11S-5E	7150	" "	22.7	35.1	11.7	2.9	2.9	16.0	4.8	4.8	16.0	4.8
15	West Yellowstone	Mont.	W. Yellowstone	34-13S-5E	6700	Gallatin	8.2	11.6	0.5	3.2	3.2	4.1	0.2	0.2	4.1	0.2
				Average for Drainage			42.2	21.2	28.6	18.4	18.4	9.0	12.8	12.8	9.0	12.8
GALLATIN RIVER																
	Devil's Slide	Mont.	20mi. S. Bozeman	14-5S-6E	8100	Gallatin	52.0	53.2	45.0	18.7	18.7	18.9	18.1	18.1	18.9	18.1
	Hood Meadow	"	14mi. S. Bozeman	22-4S-6E	6600	" "	8.4	3.3	0.0	2.7	2.7	0.8	0.0	0.0	0.8	0.0
	Hood Meadow Extn	"	14mi. S. Bozeman	22-4S-6E	6600	" "	8.8	7.8	1.5	2.4	2.4	2.1	0.5	0.5	2.1	0.5
	Mystic Lake No. 1	"	12mi. SE. Bozeman	31-3S-7E	6600	" "	1.0	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.0
	Mystic Lake No. 2	"	12mi. SE. Bozeman	31-3S-7E	6600	" "	6.0	6.0	0.0	1.9	1.9	1.7	0.0	0.0	1.7	0.0
	Twenty-One Mile	"	8mi. S. Gallatin	1-11S-5E	7150	Yel. Mat. P	22.7	35.1	11.7	2.9	2.9	16.0	4.8	4.8	16.0	4.8
				Average for Drainage			16.5	17.6	9.7	6.0	6.0	6.6	3.9	3.9	6.6	3.9
MISSOURI RIVER																
	(Helena-Great Falls)															
5	Chessman Reservr.	Mont.	11mi. SW. Helena	2-8N-5W	6200	Helena	4.1	1.2	0.0	1.2	1.2	0.3	0.0	0.0	0.3	0.0
35	Tenmile Cr. Lower	"	17mi. SW. Helena	13-8N-6W	6250	" "	3.8	3.4	0.0	0.9	0.9	0.4	0.0	0.0	0.4	0.0
36	Tenmile Cr. Middle	"	17mi. SW. Helena	13-8N-6W	6800	" "	15.7	16.5	7.5	4.8	4.8	4.9	2.7	2.7	4.9	2.7
37	Tenmile Cr. Upper	"	17mi. SW. Helena	19-8N-5W	8000	" "	25.6	27.8	17.4	8.4	8.4	8.7	6.5	6.5	8.7	6.5
30	Stemple Pass	"	Stemple Pass	16-13N-7W	6900	" "	12.0	17.9	6.0	3.7	3.7	5.0	2.2	2.2	5.0	2.2
	King's Hill	"	21mi. NW. Sul Spgs	35-13N-7E	7950	Lewis & Clark	30.7	29.2	26.0	11.2	11.2	10.8	9.1	9.1	10.8	9.1
10	Goat Mountain	"	26mi. W. Gilman	47-5N112-9W	7000	" "	9.5	11.5	6.4	3.1	3.1	3.3	2.5	2.5	3.3	2.5
				Average for Drainage			14.5	15.4	9.0	4.8	4.8	4.8	3.3	3.3	4.8	3.3
MARIAS RIVER																
18	Marias Pass	Mont.	Summit	48-3N113-4W	5250	Glacier NP	15.2	19.4	5.2	7.5	7.5	9.6	2.7	2.7	9.6	2.7

*On adjacent drainage ϕ April 16 measurement

Summary of Federal and State Cooperative Snow Surveys
Bureau of Agricultural Engineering, U. S. Dept. Agri.; Forest Service; Colo. Agri. Expt. Station
Issued May 10, 1939. Colo. Expt. Station, Fort Collins, Colo.

Main Drainage and No. Snow Course	Local Drainage	State	Locality	Description	Elev.	National Forest	May 1 Snow Course Measurements				
							Avg.	In.	Snow Depth	Av. Water Content	
							1938	1939	Avg.	1938	1939
YELLOWSTONE RIVER											
Blacktail Deer Cr.	Blk. Tail Deer	Wyo.	11mi. SE. Gardiner	44-9N110-6W	7500	Yel. Nat. P.	25.3	In.	25.3	In.	In.
Beaver Dams	Blk. Tail Deer	"	11mi. SE. Gardiner	44-9N110-6W	7200	" "	7.8	In.	7.8	9.2	2.4
Lupine Creek	Lupine Cr.	"	11mi. SE. Gardiner	44-9N110-6W	7300	" "	15.4	In.	15.4	5.9	8.4
Lodgepole	Lodgepole Cr.	Wyo.	34mi. NW Cody	32-56N-106W	8200	Shoshone	28.2	In.	28.2	6.5	
				Average for		Drainage	19.2				
SHOSHONE RIVER											
Brooks Lake No. 2	Shoshone R.	Wyo.	Brooks Lake	23-44N-110W	9200	Washakie	52.6	In.	52.6	25.4	16.3
Up. Hardpan Basin	Hardpan Cr.	"	27mi. SW. Cody	25-51N-106W	9500	Shoshone	36.0	In.	36.0	9.5	6.8
Sylvan Pass	Middle Cr.	"	Sylvan Pass	12-52N-110W	7100	Yel. Nat. P.	23.9	In.	23.9	9.2	3.9
				Average for		Drainage	37.5	In.	37.5	14.7	9.0
BIGHORN RIVER											
Brooks Lake No. 2	Wind River	"	Brooks Lake	23-44N-110W	9200	Washakie	52.6	In.	52.6	25.4	16.3
Ranger Creek	Ranger Cr.	"	14mi. E. Shell	32-53N-88W	8800	Bighorn	21.2	In.	21.2	6.8	4.5
Roaring Fork	Roaring Fk.	"	16mi. SW. Lander	7-31N-101W	10200	Washakie	17.3	In.	17.3	8.2	0.0
Shell Creek R.S.	Shell Creek	"	13mi. E. Shell	19-53N-88W	7700	Bighorn	2.7	In.	2.7	0.0	0.0
Sheridan Cr. R.S.	Sheridan Cr.	"	16mi. NW. Dubois	3-42N-109W	7500	Washakie	2.9	In.	2.9	0.0	0.4
Whorlen Meadow	Roaring Fk.	"	16mi. SW. Lander	18-31N-101W	9200	"	9.4	In.	9.4	2.5	0.0
Tensleep R.S.	Tensleep Cr.	"	15mi. NE. Tensleep	30-49N-86W	8300	Bighorn	10.3	In.	10.3	3.4	2.5
Dunrude Dude Ranch.	Wood River	"	11mi. SW. Sunshine	21-46N-103W	8000	Shoshone	0.0	In.	0.0	0.0	0.0
				Average for		Drainage	14.6	In.	14.6	5.8	3.0
TONGUE RIVER											
Big Goose Cr. R.S.	E. Goose Cr.	"	20mi. SW. Sheridan	4-53N-86W	7700	Bighorn	2.6	In.	2.6	0.0	0.2
POWDER RIVER											
Red Fork	Middle Fk.	"	23mi. W. Kaycee	18-42N-85W	7500	Off Forest	11.3	In.	11.3	2.7	1.7
Sour Dough	Sour Dough Cr.	"	10mi. W. Klondike	17-49N-84W	8500	Bighorn	15.2	In.	15.2	2.8	0.8
				Average for		Drainage	13.4	In.	13.4	2.7	1.2
NO. PLATTE RIVER											
Big Creek Lake	Big Creek	Colo.	5mi. SW. Pearl	9-11N-82W	9000	Routt	15.9	In.	15.9	7.3	3.8
Bottle Creek	Encampment Cr	Wyo.	7mi. SW. Encampment	24-14N-85W	8200	Medicine Bw	25.1	In.	25.1	9.5	4.1
Columbine Lodge	Grizzly Cr.	Colo.	Rbt. Ears Pass	21-5N-82W	9300	Routt	44.6	In.	44.6	20.4	20.7
North French Cr.	N. French Cr.	Wyo.	Cent/Saratoga	27-16N-80W	10200	Medicine B.	80.2	In.	80.2	37.1	34.6
N. Barrett Cr. #2	N. Barrett Cr.	"	" "	30-16N-80W	9400	" "	55.4	In.	55.4	25.1	22.8

*On adjacent drainage #Readings on original course

MISSOURI AND ARKANSAS

Summary of Federal and State Cooperative Snow Surveys

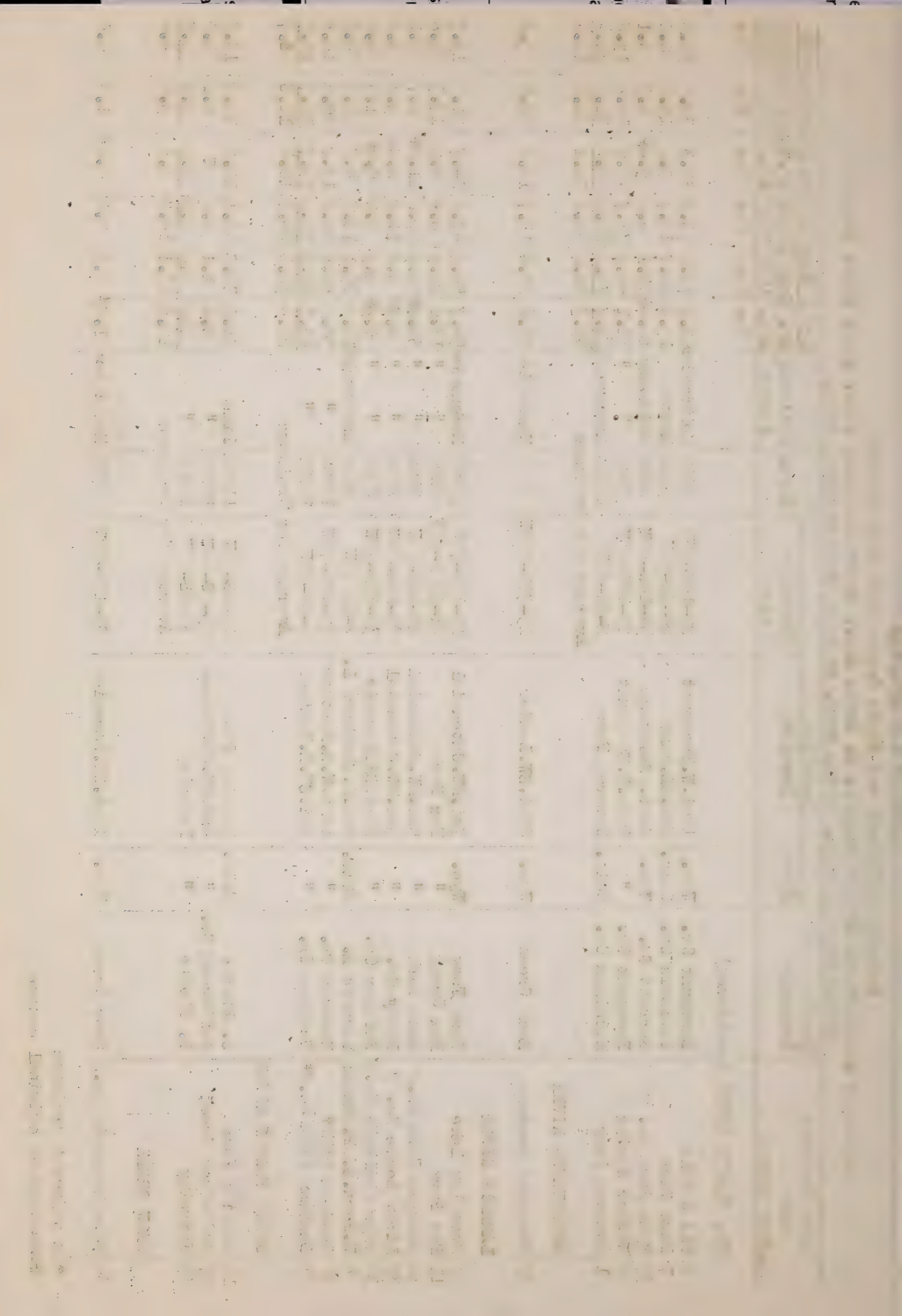
Bureau of Agricultural Experimenting, U. S. Dept. Agr.; Forest Service; Colo. Agri. Expt. Station

Issued May 10, 1930. Colo. Expt. Station, Fort Collins, Colo.

Main Drainage and No. Snow Course		Local Drainage	State	Location Locality	Descrip- tion	Elev.	May 1 Snow Course Measurements						
							In.	In.	In.	In.	In.	In.	
NO. PLATTE RIVER (continued)													
9	Old Battle	Encampment Cr.	Wyo.	12mi. W. Encampment	29-14N-85W	9800	Medicine Bow	82.2	78.0	73.3	35.3	32.5	35.0
7	Park View	Illinois Cr.	Colo.	7mi. SE. Rand	24-5N-78W	9200	Routt	17.4	28.7	17.7	7.2	13.2	8.0
39	Ryan Park No. 2	Barrett Cr.	Wyo.	Cent./Saratoga	34-16N-81W	8400	Medicine Bow	16.4	22.1	6.2	5.6	9.3	3.1
8	Webber Spring	Encampment Cr.	"	10mi. W. Encampment	27-14N-85W	9000	"	51.1	44.9	37.7	22.0	19.8	15.8
1	Cameron Pass	Michigan Cr.	Colo.	Cameron Pass	2-6N-76W	10300	Roosevelt	64.7	75.2	64.0	26.4	31.6	26.4
Average for Drainage							45.3	48.0	39.8	20.1	20.6	17.4	17.4
SWEETWATER RIVER													
29	Granmier Meadows	Rock Creek	Wyo.	20mi. SW. Lander	19-30N-100W	9000	Washakie	29.6	28.4	13.7	10.6	10.1	5.6
LARAMIE RIVER													
3	Brooklyn Lake	Nash Fork	Wyo.	7mi. NW. Centennial	11-15N-79W	10200	Medicine Bow	54.7	56.5	47.6	24.7	21.5	19.7
11	Fox Park	Fox Creek	"	Fox Park	21-13 N-78W	9200	"	18.0	26.6	6.4	8.0	13.3	2.8
36	Hairpin Turn No. 2	Nash Fork	"	5mi. NW. Centennial	25-16N-79W	9500	"	30.6	27.8	27.8	11.0	8.7	9.6
35	Libby Lodge No. 2	Libby Cr.	"	3mi. NW. Centennial	29-16N-78W	8700	"	6.7	9.8	11.2	2.4	3.3	3.8
34	Pole Mountain No. 2	Soldier Cr.	"	10mi. SE. Laramie	35-15N-72W	8700	"	1.8	5.3	0.0	0.6	1.9	0.0
4	W. Port. G.-P. Tunnel	Laramie R.	Colo.	4mi. N. Chambers L.	7-3N-75W	8600	Roosevelt	14.2	25.1	13.3	4.8	8.7	4.5
50	Deadman Hill*	Deadman Cr.	"	10mi. W. R. Feather	26-10N-75W	10200	"	50.5	59.5	48.9	17.2	20.5	16.5
71	Deadman Hill No. 2*	Deadman Cr.	"	3mi. SW. R. Feather	6-9N-74W	10200	"	43.3	48.5	38.2	14.7	16.7	12.7
Average for Drainage							27.4	32.4	24.2	10.4	11.8	8.7	8.7
SOUTH PLATTE RIVER													
14	Hoosier Pass	S. Platte	Colo.	Hoosier Pass	13-8S-78W	11400	Like	31.0	38.3	43.1	10.5	11.2	13.3
57	Jefferson Creek	Jefferson Cr.	"	4mi. NW. Jefferson	23-7S-76W	10050	"	0.4	1.1	0.0	T	0.1	0.0
15	Fairplay	S. Platte	"	Fairplay	33-9S-77W	10000	"	0.0	0.0	0.0	0.0	0.0	0.0
Average for Drainage							10.5	13.1	14.4	3.5	3.8	4.4	4.4
CROW CREEK													
34	Pole Mountain No. 2	Crow Creek	Wyo.	10mi. SE. Laramie	35-15N-72W	8700	Medicine Bow	1.8	5.3	0.0	0.6	1.9	0.0

*On adjacent drainage

#Readings on original course



MISSOURI AND ARKANSAS RIVERS

Summary of Federal and State Cooperative Snow Surveys
 Bureau of Agricultural Engineering, U. S. Dept. Agr.; Forest Service; Colorado Agri. Expt. Station
 Issued May 10, 1939. Colo. Expt. Station, Fort Collins, Colo.

Main Drainage and Snow Course		Local Drainage		Location		Elev.		National Forest		May 1 Snow Course Measurements							
				State		Locality		Descrip- tion						Av. Snow Depth		Av. Water Content	
No. Snow Course										In.		In.		1938		1939	
POUDRE RIVER																	
3	Big South	Poudre R.	Colo.	2mi. E. Chambers L	33-8N-75W	8600	Roosevelt	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	Cameron Pass	Joe Wright Cr.	"	6mi. W. Chambers L	2-6N-76W	10300	"	64.7	75.2	64.0	26.4	31.6	26.4	31.6	26.4	26.4	26.4
2	Chambers Lake	Poudre R.	"	Chambers L.	6-7N-75W	9000	"	9.3	17.5	5.3	3.8	5.6	3.1	5.6	3.1	5.6	3.1
50	Deadman Hill	N. Poudre R.	"	10mi. W. R. Feather	26-10N-75W	10200	"	50.5	59.5	48.9	17.2	20.5	16.5	20.5	16.5	16.5	16.5
71	Deadman Hill #2	N. Poudre R.	"	8mi. SW. R. Feather	6-9N-74W	10200	"	43.3	48.5	38.2	14.7	16.7	12.7	16.7	12.7	12.7	12.7
68	Hour Glass Lake	Little S. Poudre	"	2mi. N. W. Pingree P.	18-7N-73W	9500	"	20.0	20.0	20.1	6.8	6.9	6.8	6.9	6.8	6.8	6.8
65	Lake Irene*	Big S. Poudre	"	1mi. SW. Milner P.	8-5N-75W	10600	Ry. Mtn. NP.	67.8	75.3	60.4	27.5	31.4	23.6	31.4	23.6	23.6	23.6
BIG THOMPSON								Average for Drainage		36.5		42.3		33.8		13.8	
67	Fall River	Fall River	"	12mi. W. Estes P.	6-5N-74W	10600	Ry. Mtn. N. P.	70.1	75.2	65.1	23.8	20.3	26.9	20.3	26.9	26.9	26.9
65	Lake Irene*	Big Thompson R	"	1mi. SW. Milner P.	8-5N-75W	10600	" "	67.8	75.3	60.4	27.5	31.4	23.6	31.4	23.6	23.6	23.6
ST. VRAIN RIVER								Average for Drainage		68.9		75.2		62.7		25.5	
41	Wild Basin	N. St. Vrain	"	5mi. W. Allens P.	24-3N-74W	10000	Ry. Mtn. N. P.	34.6	36.9	33.4	12.8	12.8	12.6	12.8	12.8	12.6	12.6
BOULDER CREEK																	
5	E. Port. Moffat T.	S. Boulder Cr.	"	East Portal	2-2S-74W	9400	Roosevelt	0.4	1.5	0.0	0.2	0.7	0.0	0.7	0.0	0.0	0.0
60	University Camp #2	N. Boulder Cr.	"	5mi. SW. Ward	28-1N-73W	10300	"	56.7	54.2	59.3	21.3	20.4	22.3	20.4	22.3	22.3	22.3
CLEAR CREEK								Average for Drainage		28.5		27.8		29.6		10.7	
61	Loveland Pass #2	Clear Creek	"	10mi. W. Georgetown	27-4S-76W	10100	Arapaho	41.2#	55.1	47.0	14.1#	17.5	17.2	17.5	17.2	17.2	17.2

*On adjacent drainage

#Readings on original course

Date		Time		Place		Remarks	
1901	Jan 1	10:00	11:00	St. Paul	St. Paul	St. Paul	St. Paul
1901	Jan 2	10:00	11:00	St. Paul	St. Paul	St. Paul	St. Paul
1901	Jan 3	10:00	11:00	St. Paul	St. Paul	St. Paul	St. Paul
1901	Jan 4	10:00	11:00	St. Paul	St. Paul	St. Paul	St. Paul
1901	Jan 5	10:00	11:00	St. Paul	St. Paul	St. Paul	St. Paul
1901	Jan 6	10:00	11:00	St. Paul	St. Paul	St. Paul	St. Paul
1901	Jan 7	10:00	11:00	St. Paul	St. Paul	St. Paul	St. Paul
1901	Jan 8	10:00	11:00	St. Paul	St. Paul	St. Paul	St. Paul
1901	Jan 9	10:00	11:00	St. Paul	St. Paul	St. Paul	St. Paul
1901	Jan 10	10:00	11:00	St. Paul	St. Paul	St. Paul	St. Paul
1901	Jan 11	10:00	11:00	St. Paul	St. Paul	St. Paul	St. Paul
1901	Jan 12	10:00	11:00	St. Paul	St. Paul	St. Paul	St. Paul
1901	Jan 13	10:00	11:00	St. Paul	St. Paul	St. Paul	St. Paul
1901	Jan 14	10:00	11:00	St. Paul	St. Paul	St. Paul	St. Paul
1901	Jan 15	10:00	11:00	St. Paul	St. Paul	St. Paul	St. Paul
1901	Jan 16	10:00	11:00	St. Paul	St. Paul	St. Paul	St. Paul
1901	Jan 17	10:00	11:00	St. Paul	St. Paul	St. Paul	St. Paul
1901	Jan 18	10:00	11:00	St. Paul	St. Paul	St. Paul	St. Paul
1901	Jan 19	10:00	11:00	St. Paul	St. Paul	St. Paul	St. Paul
1901	Jan 20	10:00	11:00	St. Paul	St. Paul	St. Paul	St. Paul
1901	Jan 21	10:00	11:00	St. Paul	St. Paul	St. Paul	St. Paul
1901	Jan 22	10:00	11:00	St. Paul	St. Paul	St. Paul	St. Paul
1901	Jan 23	10:00	11:00	St. Paul	St. Paul	St. Paul	St. Paul
1901	Jan 24	10:00	11:00	St. Paul	St. Paul	St. Paul	St. Paul
1901	Jan 25	10:00	11:00	St. Paul	St. Paul	St. Paul	St. Paul
1901	Jan 26	10:00	11:00	St. Paul	St. Paul	St. Paul	St. Paul
1901	Jan 27	10:00	11:00	St. Paul	St. Paul	St. Paul	St. Paul
1901	Jan 28	10:00	11:00	St. Paul	St. Paul	St. Paul	St. Paul
1901	Jan 29	10:00	11:00	St. Paul	St. Paul	St. Paul	St. Paul
1901	Jan 30	10:00	11:00	St. Paul	St. Paul	St. Paul	St. Paul
1901	Jan 31	10:00	11:00	St. Paul	St. Paul	St. Paul	St. Paul

Summary of Federal and State Cooperative Snow Surveys

Bureau of Agricultural Engineering, U. S. Dept. Agr.; Forest Service; Colo. Agri. Expt. Station
Issued May 10, 1939. Colo. Expt. Station, Fort Collins, Colorado

Main Drainage and No. Snow Course	Local Drainage	State		Location		Descrip- tion	Elev.	National Forest	May 1 Snow Course Measurements				
		State	Locality	State	Locality				Avg. 1938	1939	Av. Water Content	1939	
ARKANSAS RIVER													
73 Blue Lakes	Cuchara Cr.	Colo.	15 mi. SW. LaVeta		30-31S-69W	10000	San Isabel	8.3	12.7	3.9	3.8	6.2	1.4
74 LaVeta Pass #2*	Cuchara Cr.	"	LaVeta Pass		22-28S-70W	9300	SanCristoGr.	0.9#	1.0	0.0	0.4#	0.5	0.0
42 Marshall Creek*	Poncha Cr.	"	Marshall Pass		24-43N-6E	10800	Cochetopa	23.5	33.3	19.3	9.1	12.8	8.2
43 Poncha Creek	Poncha Cr.	"	Marshall Pass		19-43N-7E	10500	"	14.9	28.2	16.7	5.7	10.3	6.8
19 Tennessee Pass	Tennessee Cr.	"	Tennessee Pass		21-8S-80W	10200	"	14.5	23.6	22.3	5.1	7.6	7.9
21 Twin Lakes Tun.	Lake Cr.	"	9 mi. W. Twin Lakes		22-11S-82W	10500	"	23.5	28.6	26.6	8.2	11.0	8.6
48 Whiskey Creek	Whiskey Cr.	"	Whiskey Cr. Pass		31-32N-69W	10200	Maxwell Gr.	5.3	5.6	0.0	2.0	1.9	0.0
78 Four Mile Park No. 2	Lake Cr.	"	3 mi. SW. Twin Lakes		23-11S-81W	9700	Cochetopa	0.0#	0.0#	0.0	0.0#	0.0#	0.0
79 Fremont Pass No. 2*	E. Fork Ark. R.	"	Fremont Pass		2-8S-79W	11400	Arapaho	44.6#	54.9#	55.0	16.5#	20.3#	20.0
					Average for Drainage			15.1	20.9	16.0	5.7	7.8	5.9

April 16 Measurement.

*On adjacent drainage

Readings on original course.

Readings on original course.

Reservoir Storage in Acre-feet, Colorado and Wyoming, as of May 1, for the Years 1930 to 1939, inclusive
(Based on data gathered by the State Engineer of Colorado and the U. S. Bureau of Reclamation)

A = Percentage of capacity. B = Percentage of 10-year average. Units in thousands of acre-feet.

Reservoir	Capacity Ac-ft	1930 Ac-ft	1931 Ac-ft	1932 Ac-ft	1933 Ac-ft	1934 Ac-ft	1935 Ac-ft	1936 Ac-ft	1937 Ac-ft	1938 Ac-ft	1939 Ac-ft	10-yr. Avg. Ac-ft	A %	B %
COLORADO														
El Even Mile	81.9	---	---	---	---	---	---	4.8	16.4	27.4	66.8	---	82	---
Cheeseman	79.0	79.1	79.1	48.0	8.4	43.4	18.7	32.0	48.7	34.4	79.1	47.1	100	168
Marston	19.8	16.6	17.8	13.1	14.6	17.1	13.8	14.2	16.7	16.7	15.4	15.6	78	99
Barr	32.2	28.4	29.6	10.2	12.0	17.8	7.4	11.4	20.0	13.3	25.6	17.6	80	145
Milton	24.4	19.2	20.4	7.4	4.9	10.5	1.8	3.5	11.0	4.0	15.9	9.9	83	161
Riverside	57.5	50.4	54.8	41.8	12.8	46.7	12.7	44.1	47.0	30.7	54.6	39.6	95	138
Empire	37.7	33.5	34.4	27.1	22.2	24.7	0.0	18.6	24.7	23.0	34.4	24.3	91	141
Jackson Lake	35.4	34.5	35.0	33.5	33.2	33.4	31.7	31.2	33.4	33.2	34.1	33.3	96	102

MISSOURI AND ARKANSAS

Reservoir Storage in Acre-feet, Colorado and Wyoming, as of May 1, for the Years 1930 to 1939, inclusive
(Based on data gathered by the State Engineer of Colorado and the U. S. Bureau of Reclamation)
A = Percentage of capacity. B = Percentage of 10-year average. Units in thousands of acre-feet.

Reservoir	Capacity Ac-ft	1930 Ac-ft	1931 Ac-ft	1932 Ac-ft	1933 Ac-ft	1934 Ac-ft	1935 Ac-ft	1936 Ac-ft	1937 Ac-ft	1938 Ac-ft	1939 Ac-ft	10-yr. Avg. Ac-ft	A %	B %
COLORADO, Cont.														
Prewitt	32.8	27.0	25.5	21.8	9.8	23.2	4.2	12.0	19.2	9.7	28.6	18.1	87	158
Point of Rocks	65.0	49.2	53.0	22.2	29.4	60.0	30.1	56.8	64.3	38.0	66.4	46.9	100	142
Julesburg	28.2	22.6	22.8	22.6	20.3	21.9	22.8	22.0	20.9	22.9	21.5	22.0	76	98
Twin Lakes	57.9	20.4	13.5	5.9	5.9	6.6	13.8	14.5	14.4	7.2	28.4	13.1	49	217
Meredith	41.9	25.3	25.9	2.5	0.0	0.0	0.0	0.0	3.0*	0.0	24.3	8.1	58	300
Horse Creek	26.9	10.9	12.8	0.0	4.3	0.0	0.0	0.0	7.9	0.0	8.3	4.4	31	188
Adobe Creek	61.6	56.9	46.3	0.0	0.0	0.0	0.0	0.0	1.7	0.0	8.2	11.3	13	73
Model	17.8	9.7	14.4	6.4	0.0	2.7	0.0	2.6	1.8	3.0	8.5	4.9	48	173
Standley	18.5	17.1	13.1	3.4	1.4	0.0	2.8	13.4	15.8	12.2	15.7	9.5	85	165
Marshall	10.3	5.7	3.3	1.3	1.8	3.1	0.1	4.1	6.0	6.9	6.2	3.8	60	163
Loveland	14.3	11.0	8.9	0.8	0.0	2.1	0.7	3.0	1.0	1.0	12.3	4.1	86	300
Mariano	5.4	5.0	5.3	3.0	3.1	3.3	0.4	3.0	3.0	3.9	4.8	3.5	89	137
Union	12.7	8.8	9.1	3.0	0.6	4.1	0.0	2.9	7.5	3.1	12.6	5.2	99	242
Windsor Res.	18.6	16.9	12.7	7.9	4.2	11.8	2.8	11.2	10.5	11.8	17.7	10.7	95	165
Cache La Poudre	9.5	9.2	8.9	4.4	5.0	9.1	2.8	5.7	7.3	7.5	9.2	6.9	96	132
Fossil Creek	11.6	11.6	11.6	4.3	6.1	11.2	2.9	8.1	7.1	5.5	11.7	8.0	100	146
Terry	8.2	7.1	5.0	4.0	4.1	4.4	4.1	4.2	4.1	4.1	5.9	4.7	72	125
Halligan	6.4	6.4	5.3	2.0	1.6	2.0	3.0	2.9	4.1	4.9	4.3	3.6	67	119
Chambers Lake	8.8	6.2	3.0	2.0	2.3	4.0	0.7	2.8	2.4	3.1	7.3	3.4	83	215
WYOMING														
Pathfinder	1070.0	906.0	613.1	352.5	404.7	331.8	133.2	263.5	343.8	352.8	430.3	413.2	40	104
Guernsey	71.6	60.2	57.9	50.1	63.8	37.6	24.8**	44.7**	37.5**	52.5**	42.0	47.1	77**	89
Seminole	1000.0								0	0	85.5	---	9	---
Alcova	185.0								0	99.4	123.5	---	67	---
Wheatland	90.0								20.9	26.1	51.0	---	57	---
Shoshone	456.6								342.1	317.1	394.3	---	86	---
Jackson Lake	847.0	572.7	420.4	185.7	535.9	348.6	206.0	331.5	504.2	430.6	---	---	---	---
Bull Lake	152.0									0	42.8	---	28	---
Pilot Butte Lake	30.0									21.5	19.8	---	66	---

*Estimated **Based on capacity 54,610 Acre-Feet.

(2374-39)

